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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/666,371	09/20/2000	Davi Geiger	24147.00	6163

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EXAMINER

ABDULSELAM, ABBAS L

ART UNIT PAPER NUMBER

2674

DATE MAILED: 05/22/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.  
09/666,371

Applicant(s)  
Geiger et al.

Examiner  
Abbas Abdulsalam

Group Art Unit  
2674



- ☐ Responsive to communication(s) filed on \_\_\_\_\_
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

## Disposition of Claims

- ☒ Claim(s) 1-14 is/are pending in the application.
- Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- ☒ Claim(s) 1-14 is/are rejected.
- ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- ☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.

## Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- ☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

- ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- ☐ All ☐ Some\* ☐ None of the CERTIFIED copies of the priority documents have been
- ☐ received.
- ☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_.
- ☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

- ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

- ☒ Notice of References Cited, PTO-892
- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). \_\_\_\_\_
- ☐ Interview Summary, PTO-413
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

Art Unit: 2674

## **DETAILED ACTION**

### **Claim Rejections 35 U.S.C. 103**

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stytz et al.

(USPN 5201035) in view of Orell et al. (USPN 6373484).

Regarding claim 1, Stytz teaches segmentation of a three dimensional image along a plane or planes of interest. See col. 1, lines 36-44. Stytz teaches algorithm for volume determination in connection with location in which cutting plane takes place. See Fig 6. Stytz also teaches a three dimensional array in which voxel values are stored and are described in terms of coordinates. See col. 5, lines 25-34. Furthermore, Stytz teaches the use of storage of the display information with sufficient memory which is organized as units. See col. 2, lines 10-14 and col. 18, lines 23-28. Stytz teaches of node(11i) with their corresponding coordinates (11m) along with voxel value (11n) and voxel coordinates (11o). See Fig 11a. However, Stytz does not teach a graph structure that demonstrates nodes in terms of edges. Orell on the other hand teaches a computer program which performs graphical representation of data structure having nodes and interconnecting edges. Specifically, Orell teaches control graph management module (42) and path management

Art Unit: 2674

module (43) that position the nodes with respect to the edges in any desired fashion. See col. 10, lines 10-29, 35-40 and Fig 11.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Stytz's method of three dimensional data manipulation to include Orell's computer program including "the control graph management module". One would have been motivated in view of Orell that the computer program provides the desired configurations of edges with respect to nodes. The use of nodes and edges helps three dimensional graphic data manipulation as taught by Orell et al..

Regarding claim 2, stytz teaches a step to determine and confirm that the eight image voxel coordinates belonging to the current Oct-tree leaf node have been generated. See col. 17, lines 34-37 and Fig 11a.

Regarding claims 3 and 10, Stytz teaches the voxel data model representing data elements with array values. See col. 4, lines 35-42.

Regarding claims 4, 9 and 11, Stytz teaches the object space partition in terms of neighborhood of points. See col. 5, lines 54-66.

Regarding claims 5-6 and 12-13, Stytz teaches the application of data array for cube structure. See col. 5, lines 47-66.

Regarding claims 7 and 14, Stytz teaches volume rendering algorithm. See Fig 10 (5N) where N stands for dimension.

Art Unit: 2674

Regarding claim 8, Orell teaches the presentation of values by colors though specific information of viewable nodes and edges. See col. 5, lines 43-45.

### **Conclusion**

2. The prior art made of record and not relied upon is considered to applicant's disclosure.

The following arts are cited for further reference.

U.S. Pat. No. 4,989,142 to Crawford

U.S. Pat. No. 5,583,975 to Naka et al.

U.S. Pat. No. 5,835,617 to Ohta et al.

U.S. Pat. No. 6,323,846 to Westerman et al.

Art Unit: 2674

3. Any inquiry concerning this communication or earlier communication from the examiner should be directed to **Abbas Abdulsalam** whose telephone number is **(703) 305-8591**. The examiner can normally be reached on Monday through Friday (9:00-5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Richard Hjerpe**, can be reached at **(703) 305-4709**.

**Any response to this action should be mailed to:**

Commissioner of patents and Trademarks

Washington, D.C. 20231

**or faxed to:**

**(703) 872-9314**

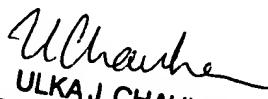
Hand delivered responses should be brought to crustal park II, Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology center 2600 customer Service office whose telephone number is (703) 306-0377.

Abbas Abdulsalam

Examiner

Art Unit 2674

  
**ULKA J. CHAUHAN**  
**PRIMARY EXAMINER**